

What is claimed is:

1. A method of recovering nutrients from animal byproducts comprising the steps of:  
grinding animal byproduct material to a predetermined size;  
separating protein from the animal byproduct material to produce a meal; and  
drying the meal.
2. The method of claim 1, wherein said grinding step comprises the step of reducing the animal byproduct material to a particle size less than about 4 mm.
3. The method of claim 1, wherein the animal byproduct includes chicken bones.
4. The method of claim 1, wherein the animal byproduct includes the entire leftover portion of the animal being processed.
5. The method of claim 1, further comprising the step of heating the animal byproduct material to about 160 degrees F before separating protein from the animal byproduct material.
6. The method of claim 5, wherein said heating the animal byproduct material comprises the step of heating the animal byproduct material for about ten seconds.
7. The method of claim 5, wherein said heating the animal byproduct comprises the step of injecting steam into the animal byproduct material.
8. The method of claim 1, wherein said separating protein from the animal byproduct material further comprises the step of separating oil and water from the animal byproduct material.
9. The method of claim 8, further comprising the step of directing water separated from the animal byproduct material to a heating apparatus that heats the animal byproduct material by injecting steam into the animal byproduct material.

10. The method of claim 1, further comprising the step of adding a material from a group consisting of grain, cereal, soy and combinations thereof.
11. The method of claim 1, wherein said drying the meal comprises the step of passing the meal through air heated at about 350 degrees F for about five to about seven seconds.
12. A system for recovering animal byproducts to provide protein meal that is less denatured and more digestible, the system comprising:
  - a grinder for reducing animal byproducts to a predetermined size;
  - a separator downstream from said grinder; and
  - a dehydrator receiving material from said separator and removing water therefrom.
13. The system of claim 12, wherein said grinder is adapted to reduce animal byproduct material to a diameter of about 4 mm.
14. The system of claim 12, wherein said grinder is adapted to grind animal byproduct material that includes chicken bones.
15. The system of claim 12, wherein said separator comprises a centrifuge adapted to separate animal byproduct into oil, water and solids.
16. The system of claim 12, further comprising a heater interposed between said grinder and said separator.
17. The system of claim 16, further comprising a water conduit in communication with said separator and said heater, wherein water separated by said separator is directed toward said heater.
18. The system of claim 16, wherein said heater is adapted to introduce steam into animal byproduct material traveling through said heater.

19. The system of claim 12, wherein said dehydrator comprises an agitator, a drying duct, and a cyclone.

20. A method of recovering nutrients from animal byproducts to form a base material comprising the steps of:

receiving animal byproduct material from an on-site poultry processing plant;  
grinding the animal byproduct material to between about 4 mm to about 25 mm

particles;

heating the particles in a continuous heater;

separating the particles into water, fat, and protein material; and

drying the protein material.